GAMMA-GT
IFCC SZASZ Method

LW system pack

DIATEK

CLINICAL SIGNIFICANCE :

Gamma -GT plays an important role in amino acid transport in the course of glutathione metabolism. The enzyme present in the serum is mainly of hepato-biliary origin. Increased enzyme activities are found in association with chronic alcoholism, different toxic liver damages, intra- and extrahepatic cholestasis, acute viral hepatitis, pancreatitis, neoplastic diseases of the liver and pancreas myocardial infarction as well as with diabetes mellitus.

TEST PRINCIPLE :

Optimized kinetic determination of g-glutamyltransferase (g-GT). The increase of the absorbance at 405 nm, due to the formation of the 5-Amino-2- nitrobenzoic acid, is proportional to the g-GT-activity.

L-Gamma-glutamyl-3-carboxy-4-nitroanilide + Glycylglycine

g-GT ↓

Gamma-glutamyl-glycylglycine + 5-Amino-2-nitrobenzoate

REAGENTS COMPOSITION :

R1: Glycylglycine 150 mmol/l

R2: L-Gamma-glutamyl-3- carboxy-4-nitroanilide 6 mmol/l

KIT CONTENTS :

CODE No. :	GGTLW01
Pack size :	(5 x 10 ml)
Reagent 1	4 x 10 ml
Reagent 2	2 x 5 ml

All the components of the kit are stable until the expiration date on the label when stored tightly closed at 2 - 8 ºC, and contaminations prevented during their use. Do not use reagents over the expiration date. Once opened the reagent is stable for 1 month On-board the analyser at approximately 10°C.

SAMPLES : Serum or heparinised Plasma, Fasting preferable
Serum should be separated from blood as soon as possible.
Sample must be free of hemolysis

Materials Required but not provided :

Gamma GT IFCC Calibrator and Control

(Use of assayed QC sera is recommended to validate test result).

INTERFERENCES

The following analytes were tested up to the levels indicated and found not to interfere with Ascorbic Acid up to 30 mg/dL, Bilirubin up to 40 mg/dL, Hemoglobin up to 500 mg/dL and Triglycerides up to 2000 mg/dL.

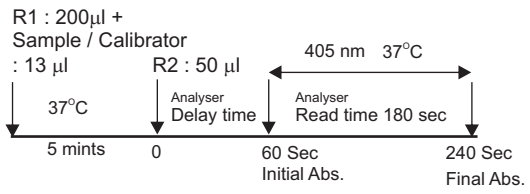
ASSAY CONDITIONS:

Wavelength :	405 nm
Cuvette:	1 cm light path
Constant temperature	37ºC
Reaction (Mode)	Kinetic
Calibrator Conc.	See calibrator value
Delay	60 sec
Read time	180 sec
Linearity	800 U/L
Unit	U/L
Blanking	D. Water
Slope of reaction	Increasing

PROCEDURE :

1. Mix 13 µl Sample / Calibrator with 200 µl R1, mix and wait for 5 mints.
2. Mix 50 µl R2 and read initial absorbance after 60 sec. and measure final absorbance after 180 sec against distilled water blank at 405 nm by an Analyser.
3. Calculate absorbance change per minute (△ A/min).

Assay Procedure summary:



CALCULATIONS (With Calibrator):

$$\text{GGT (U/L)} = \frac{\triangle \text{ Abs / mint of sample}}{\triangle \text{ Abs / mint of Calib.}} \times \text{Conc. of Calib.}$$

CALCULATIONS (With Factor at 37°C):

GGT Activity in U/L = △ Abs/mint of Test x KF

Gamma GT (GGT) Calibrator (IFCC) is recommended to use for calculation of Kinetic Factor in LW SERIES and other fully automated Analysers. Kinetic Factor (KF) value is Lot Specific.

REFERENCE RANGE :

	Female	Male
Adults:	9 - 36	12 - 64
Children:		
1 Day– 6 Months	15 - 132	12 - 122
6 Months – 1 Year	1 - 39	1 - 39
1 – 12 Years	4 - 22	3 - 22
13 – 18 Years	4 - 24	2 - 42

The above reference range is guideline and all the laboratories must establish their own Age sepcific normal reference range. Final diagnosis should be made with correlation of clinical factors.

PRECAUTIONS :

1. Storage conditions as mentioned on the kit to be adhered.
2. Avoid contamination of the reagent during the assay process.
3. If a larger volume of reagent is required for the absorbance reading, requisite volume can be taken in multiples, keeping the same ratio of reagent to specimen
4. Do not freeze or expose the reagents to high temperature and protect from direct sunlight as it will affect the performance of the kit.
7. Programmes for specific LW autoanalysers are available on request.
8. For accuracy of results, the assay procedure, reagent preparation and storage has to be meticulously followed.
9. As with all the diagnostic procedures, the physician should evaluate data obtained by the use of this kit in light of other clinical information.

LINEARITY AND DETECTION LIMIT :

The assay is linear up to GGT activity upto 800 IU/L. The results of the performance characteristics depend on the analyzer used. If the results obtained were greater than linearity limit, dilute the sample 1 : 5 with Normal Saline and multiply the result by 5.

BIBLIOGRAPHY

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